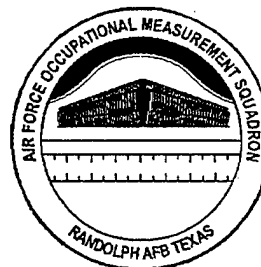
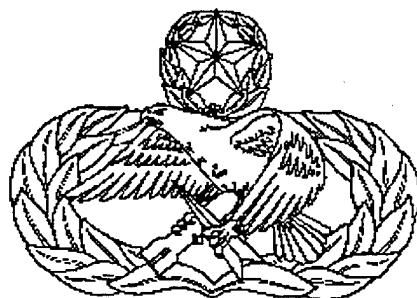




**UNITED STATES
AIR FORCE**



OCCUPATIONAL SURVEY REPORT



**AIRCRAFT COMMAND CONTROL COMMUNICATIONS
AND NAVIGATION SYSTEMS**

AFSC 2A4X3

OSSN: 2308

JUNE 1998

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**OCCUPATIONAL ANALYSIS PROGRAM
AIR FORCE OCCUPATIONAL MEASUREMENT SQUADRON
AIR EDUCATION and TRAINING COMMAND
1550 5th STREET EAST
RANDOLPH AFB, TEXAS 78150-4449**

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PREFACE

This report presents the results of an Air Force Occupational Survey of the Aircraft Command Control Communications and Navigation Systems career ladder, Air Force Specialty Code (AFSC) 2A4X3. Authority for conducting occupational surveys is contained in AFI 36-2623. Computer products used in this report are available for use by operations and training officials.

The survey instrument was developed by 2Lt Christopher Gilliam. Computer programming support was provided by Mr. Tyrone Hill. Mr. Robert E. Boerstler, Jr. analyzed the data and wrote the final report. This report has been reviewed and approved by Lt Col Roger W. Barnes, Chief, Airman Analysis Section, Occupational Analysis Flight, Air Force Occupational Measurement Squadron (AFOMS).

Copies of this report are distributed to Air Staff sections, major commands, and other interested training and management personnel. Additional copies are available upon request to AFOMS/OMYXI, 1550 5th Street East, Randolph Air Force Base, Texas 78150-4449, or by calling DSN 487-5543. For information on the Air Force occupational survey process or other on-going projects, visit our web site at <http://www.omsq.af.mil>.

GEORGE KAILIWAI III, Lt Col, USAF
Commander
Air Force Occupational Measurement Sq

JOSEPH S. TARTELL
Chief, Occupational Analysis Flight
Air Force Occupational Measurement Sq

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SUMMARY OF RESULTS

1. **Survey Coverage:** The Aircraft Command Control Communications and Navigation Systems career ladder was surveyed to provide current job and task data for use in updating career ladder documents and training programs. Survey results are based on responses from 273 members accounting for 72 percent of the total population surveyed.
2. **Specialty Jobs:** Three jobs and one cluster were identified in the career ladder structure analysis. The Flightline Maintenance Cluster and the UAV Job are totally oriented toward technical task performance and account for 85 percent of the population. The remaining jobs are management and training in nature.
3. **Career Ladder Progression:** A somewhat typical pattern of progression is noted within the AFSC 2A4X3 career ladder. Personnel at the 3- and 5-skill levels work in the technical jobs of the career ladder and spend most of their time on technical tasks. As incumbents move up to the 7-skill level they begin to perform supervisory tasks, but still spend some of their time performing the technical tasks of the career ladder.
4. **Training Analysis:** The current STS warrants review of proficiency coding based on survey data. Many tasks with high percentages of members performing and high training emphasis are dashed in the STS.
5. **Job Satisfaction:** Job satisfaction among AFSC 2A4X3 personnel is slightly higher for first-enlistment and slightly lower for second-enlistment members than the comparative sample of like maintenance AFSCs. Reenlistment intentions are lower than the comparative sample for first- and second-enlistment personnel. All TAFMS groups rate perceived utilization of training lower than the comparative sample.
6. **Implications:** Survey results indicate the present classification structure accurately portrays the jobs performed in this career ladder. The career ladder progression is typical of most AFSCs. Training documents warrant review for proficiency coding. Job satisfaction ratings are similar to other AFSCs while reenlistment intentions are lower for first- and second-enlistment personnel. All TAFMS groups rate perceived utilization of training lower than the comparative sample, reinforcing the recommendation for an STS review.

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**OCCUPATIONAL SURVEY REPORT (OSR)
AIRCRAFT COMMAND CONTROL COMMUNICATIONS
AND NAVIGATION SYSTEMS
(AFSC 2A4X3)**

INTRODUCTION

This is a report of an occupational survey of the Aircraft Command Control Communications and Navigation Systems career ladder conducted by the Air Force Occupational Measurement Squadron (AFOMS). The current Aircraft Command Control Communications and Navigation Systems career ladder was created in April 1994. Survey data will be used to identify current utilization patterns among career ladder personnel and evaluate career ladder documents and training programs.

Background

As described in the AFMAN 36-2108, *Airman Classification*, 11 March 1998, *Specialty Description*, dated 30 April 1994, Aircraft Command Control Communications and Navigation Systems personnel perform organization and in-flight maintenance on command control communications, cryptographic, computer, navigation, ancillary systems and related support equipment (SE).

Personnel entering the AFSC 2A4X3 career ladder must attend the E3ABR2A433-000, Aircraft Command Control Communications and Navigation Systems Apprentice course (piggyback with the E3ABR2A432-000, Aircraft Communications/Navigation Systems Apprentice) at Keesler AFB MS. Upon completion of this course, students attend an aircraft specific course based on their end assignment, ranging from 25-31 weeks in length.

Entry into this career ladder currently requires an Armed Forces Vocational Aptitude Test Battery (ASVAB) score of General - 67; a strength factor of "J" (Weight lift of 60 lbs) is also required.

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SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory (JI) Occupational Survey Study Number (OSSN) 2308, dated September 1997. A tentative task list was prepared after reviewing pertinent career ladder publications and directives, pertinent tasks from the previous survey instrument, and data from the last OSR. The preliminary task list was refined and validated through personal interviews with 35 subject-matter experts (SMEs) at the following training location and operational installations:

<u>BASE</u>	<u>UNIT VISITED</u>
Keesler AFB MS	332 TRS
Offutt AFB NE	7 ACCS
Tinker AFB OK	952 AGS
Robins AFB GA	93 ACW
Davis-Monthan AFB	41 ECS
Nellis AFB NV	11 RS

The resulting JI contains a comprehensive listing of 805 tasks grouped under 18 duty headings, and a background section requesting such information as grade, base, MAJCOM assigned, organizational level, component status, job title, functional area, work schedule, test equipment used or operated, support equipment used or operated, aircraft maintained, and forms used.

Survey Administration

From October 1997 through March 1998, base training offices at operational units worldwide administered the inventory to eligible AFSC 2A4X3 personnel. Job incumbents were selected from a computer-generated mailing list obtained from personnel data tapes maintained by the Air Force Personnel Center, Randolph AFB TX. Each individual who completed the inventory first completed an identification and biographical information section and then checked each task performed in his or her current job. After checking all tasks performed, each member then rated each of these tasks on a 9-point scale, showing relative time spent on that task, as compared to all other tasks checked. The ratings ranged from 1 (very small amount time

spent) through 5 (about average time spent) to 9 (very large amount time spent). To determine relative time spent for each task checked by a respondent, all of the incumbent's ratings are assumed to account for 100 percent of his or her time spent on the job and are summed. Each task rating is then divided by the total task ratings and multiplied by 100 to provide a relative percentage of time for each task. This procedure provides a basis for comparing tasks in terms of both percent members performing and average percent time spent.

Survey Sample

Personnel were selected to participate in this survey so as to ensure an accurate representation across major commands (MAJCOM) and military paygrade groups. All eligible AFSC 2A4X3 personnel were mailed survey disks. Table 1 reflects the percentage distribution, by MAJCOM, of assigned AFSC 2A4X3 personnel as of October 1997. The 273 respondents in the final sample represent 68 percent of the total assigned personnel and 72 percent of the total personnel surveyed. Table 2 reflects the paygrade distribution for these AFSC 2A4X3 personnel.

TABLE 1

COMMAND DISTRIBUTION OF AFSC 2A4X3 PERSONNEL

COMMAND	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE
ACC	87	88
AETC	7	6
PACAF	4	5
OTHERS	2	1

TOTAL ASSIGNED* = 402

TOTAL SURVEYED** = 379

TOTAL IN SURVEY SAMPLE = 273

PERCENT OF ASSIGNED IN SAMPLE = 68%

PERCENT OF SURVEYED IN SAMPLE = 72%

* Assigned strength as of October 1997

** Excludes personnel in PCS, student, or hospital status, or less than 6 weeks on the job

TABLE 2
PAYGRADE DISTRIBUTION OF SURVEY SAMPLE

GRADE	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE
E-1 - E-3	26	29
E-4	26	24
E-5	27	27
E-6	13	13
E-7	8	7

* Assigned strength as of October 1997

Both Command and Paygrade distribution of the survey sample are close to the percent assigned. This indicates the sample is a true representation of the career ladder population.

Task Factor Administration

Job descriptions alone do not provide sufficient data for making decisions about career ladder documents or training programs. Task factor information is needed for a complete analysis of the career ladder. To obtain the needed task factor data, selected senior AFSC 2A4X3 personnel (generally E-6 or E-7 craftsmen) also completed a second booklet for either training emphasis (TE) or task difficulty (TD). These booklets were processed separately from the JIs. This information is used in a number of different analyses discussed in more detail within the report.

Training Emphasis (TE): TE is a rating of the amount of emphasis that should be placed on tasks in entry-level training. The 35 senior NCOs who completed a TE booklet were asked to select tasks they felt require some sort of structured training for entry-level personnel and then indicate how much training emphasis these tasks should receive, from 1 (extremely low emphasis) to 9 (extremely high emphasis). Structured training is defined as training provided at resident training schools, field training detachments (FTD), mobile training teams (MTT), formal on-the-job-training (OJT), or any other organized training method. Interrater agreement for these 44 raters was acceptable. The average TE rating was 1.49, with a standard deviation of 1.25. Any task with a TE rating of 2.74 or above is considered to have high TE.

Task Difficulty (TD): TD is an estimate of the amount of time needed to learn how to do each task satisfactorily. The 30 senior NCOs who completed TD booklets were asked to rate the difficulty of each task using a 9-point scale (extremely low to extremely high). Interrater reliability was acceptable. Ratings were standardized so tasks have an average difficulty of 5.00

and a standard deviation of 1.00. Any task with a TD rating of 6.00 or above is considered to be difficult to learn.

When used in conjunction with the primary criterion of percent members performing, TE and TD ratings can provide insight into first-enlistment personnel training requirements. Such insights may suggest a need for lengthening or shortening portions of instruction supporting entry-level jobs.

SPECIALTY JOBS

The first step in the analysis process is to identify the structure of the career ladder in terms of the jobs performed by the respondents. The Comprehensive Occupational Data Analysis Program (CODAP) assists by creating an individual job description for each respondent based on the tasks performed and relative amount of time spent on these tasks. The CODAP automated job clustering program then compares all the individual job descriptions, locates the two descriptions with the most similar tasks and time spent ratings, and combines them to form a composite job description. In successive stages, CODAP either adds new members to this initial group, or forms new groups based on the similarity of tasks and time spent ratings.

The basic group used in the hierarchical clustering process is the Job. When two or more jobs have a substantial degree of similarity, in tasks performed and time spent on tasks, they are grouped together and identified as a Cluster. The structure of the career ladder is then defined in terms of jobs and clusters of jobs.

Overview of Specialty Jobs

Based on the analysis of tasks performed and the amount of time spent performing each task, three independent jobs and one cluster were identified within the career ladder. Figure 1 illustrates the jobs and clusters performed by AFSC 2A4X3 personnel.

A listing of these jobs and clusters is provided below. The stage (ST) number shown beside each title references computer printed information, the letter "N" indicates the number of personnel in each group.

- I. FLIGHTLINE MAINTENANCE CLUSTER (ST020, N=216)
 - A. E-4 Maintenance
 - B. RC-135 Maintenance
 - C. EC-135 Maintenance
 - D. EC-130E Maintenance
 - E. E-3 Maintenance
 - F. EC-130H Maintenance
 - G. E-8 Maintenance
- II. MANAGEMENT JOB (ST019, N=17)
- III. UNMANNED AEROSPACE VEHICLE (UAV) JOB (ST032, N=12)
- IV. INSTRUCTOR JOB (ST030, N=8)

The respondents forming these jobs and clusters account for 92 percent of the survey sample. The remaining 8 percent, for one reason or another, did not group into one of these jobs or clusters. Examples of job titles for these personnel include CDC Writer, Building Manager, Network Administrator, and SIM Developer.

AFSC 2A4X3 CAREER LADDER SPECIALTY JOBS (N = 273)

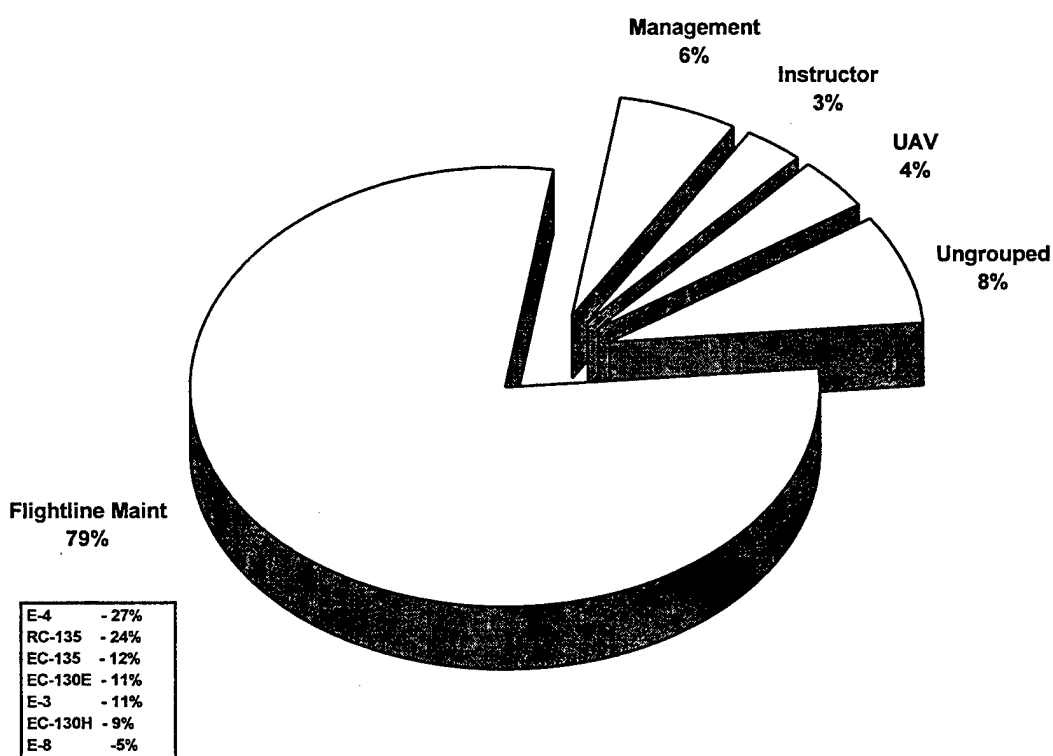


FIGURE 1

Group Descriptions

The following paragraphs contain brief descriptions of the jobs and clusters identified through the career ladder structure analysis. Table 3 presents the relative time spent on duties by members of these specialty jobs and clusters. Selected background data for these jobs and clusters are provided in Table 4. Representative tasks for all the groups are contained in Appendix A.

I. FLIGHTLINE MAINTENANCE CLUSTER (ST020). The 216 airmen performing within this cluster (79 percent of the survey sample) represent the core of the career ladder. They spend 47 percent of their time performing the Common Communications and Navigation Systems tasks of Duties C and D, and another 23 percent performing the tasks of the aircraft unique mission systems (Table 3). The average number of tasks performed by this group are 203, the highest of any other job or cluster, indicating their diversity in performing the core Aircraft Command Control Communications and Navigation Systems duties. Distinctive tasks performed include:

- Troubleshoot interphones
- Perform operational checks of IFF transponders
- Troubleshoot HF communications equipment
- Remove or install HF communications equipment LRUs
- Remove or install interphone LRUs
- Perform operational checks of HF communications equipment
- Remove or install IFF transponder LRUs
- Perform operational checks of interphones
- Perform operational checks of IFF Mode IV computers
- Troubleshoot IFF transponders
- Remove or install IFF Mode IV computer LRUs
- Inspect high frequency (HF) communications equipment
- Troubleshoot IFF Mode IV computers
- Perform operational checks of VOR/ILS equipment

Forty-seven percent of these airmen hold the 5-skill level and 44 percent the 3-skill level. These members average 5 1/2 years in the career field and 7 years in the service. The predominant paygrades of this large cluster are E-3 to E-5. Forty-seven percent of this core cluster are in their first enlistment, revealing a very young and somewhat inexperienced career ladder.

There are seven distinct jobs within this cluster that are separated by the type and frequency of the tasks performed. This separation also aligns with the type of aircraft maintained by the cluster members.

The **E-4 Job** is defined by the 34 percent members performing the E-4 Unique Mission Systems of Duty G. These 56 members account for 27 percent of the Flightline Maintenance Cluster. They average a very high 269 tasks performed, indicating a very diverse job of maintaining many systems on the E-4 aircraft. The predominant paygrade is E-5, averaging just over 5 years in the career field and 7 years in the service.

The **RC-135 Job** accounts for 24 percent of the cluster and are defined by the Common Navigation and Communications Systems tasks of duties D and C. Fifty-six percent of these job members are E-3 or E-4, reflecting a very young job cadre. Forty percent hold the 3-skill level and 52 percent the 5-skill level.

The 24 members of the **EC-135 Job** account for 12 percent of the Flightline Maintenance Cluster. They are defined by the Common Navigation and Communications Systems of Duties D and C, along with the EC-135 Unique tasks of Duty J. The predominant paygrade of this job is E-5, with 58 percent of these members reporting they supervise others. These job incumbents average almost 7 years in the career field and 8 years in the service, the highest of any other job within this cluster.

The **EC-130E Job** accounts for another 12 percent of the cluster, and is defined by the high performance of the EC-130E Unique tasks of Duty I. These members average less than 2 years in the career field and almost 4 years in the service with a predominant paygrade of E-3.

The **E-3 Job** is defined by the high percentage of the E-3 Unique tasks of Duty F performed by these job incumbents. These 22 members perform an average 178 tasks on the E-3 aircraft. Thirty-six percent of these members are assigned to PACAF, the highest percentage of any job to this command. The predominant paygrade is E-5, averaging 5 1/2 years in the career field and 6 1/2 years in the service.

The **EC-130H Job** is comprised of 19 members averaging 179 tasks performed on this aircraft. Like the other jobs, this job is clearly separated by the tasks performed on the Compass Call aircraft. The predominant paygrade of this job is E-4, with 63 percent holding the 3-skill level.

The **E-8 Job** is the smallest of the jobs within the cluster with only 10 members. They average performing 178 tasks and are relatively new to the aircraft, averaging only 1 1/2 years in the job. The predominant paygrade is E-5, averaging just over 4 years in the career field and 6 years in the service.

II. MANAGEMENT JOB (ST019). The 17 airmen forming this job (6 percent of the survey sample) perform an average of 124 tasks and are distinguished by the 49 percent of their time spent performing the Management and Supervisory tasks of Duty O (Table 3). They spend another 26 percent of their time performing the Maintenance Management, Training, and General Administrative and Technical Order tasks of Duties N, P, and Q. Typical of the management and supervisory tasks performed include:

- Supervise military personnel
- Evaluate personnel for compliance with performance standards

- Counsel subordinates concerning personal matters
- Develop or establish work schedules
- Inspect personnel for compliance with military standards
- Conduct supervisory performance feedback sessions
- Determine or establish work assignments or priorities
- Write performance reports or supervisory appraisals
- Establish performance standards for subordinates
- Evaluate work schedules
- Schedule work assignments or priorities

The predominant paygrades of this job are E-6 and E-7 (Table 4), averaging 13 years in the career field and 17 years in the service. Eighty-two percent report holding the 7-skill level with 94 percent supervising others. Furthermore, 18 percent of these members are assigned to units overseas.

III. UNMANNED AEROSPACE VEHICLE (UAV) JOB (ST037). The 12 airmen forming this job (4 percent of the survey sample) are distinguished by the 87 percent of their time spent performing the UAV Unique tasks of Duty L and the General Aircraft Maintenance tasks of Duty K (Table 3). All of these members are assigned to the 11th Reconnaissance Squadron at Indian Springs. They average only 66 tasks performed, indicating their limited exposure to the many tasks performed by the core of the career and specialization in UAV mission tasks. Representative tasks performed by these incumbents include:

- Perform preflight inspections
- Remove or install UAV engines or engine components
- Inspect UAV engines or engine components
- Inspect UAV landing gear system components
- Inspect UAV aircraft fuel system components
- Inspect UAV aircraft cameras
- Inspect UAV engine cooling system components
- Inspect UAV engine ignition system components
- Remove or install UAV aircraft cameras
- Refuel or defuel aircraft
- Inspect UAV flight control system components
- Remove or install UAV engine ignition system components
- Remove or install UAV aircraft brake system components
- Inspect UAV electrical power and distribution system components
- Inspect UAV aircraft lighting system components

The predominant paygrade is E-3 with 42 percent reporting they supervise others. Fifty-eight percent hold the 3-skill level, while 59 percent are in their first enlistment (Table 4). The members of this job average almost 3 years in the career field and 4 1/2 years in the service.

IV. INSTRUCTOR JOB (ST030). Comprising 3 percent of the survey sample, these 8 airmen report 39 percent of their time performing Training tasks of Duty P. They also spend 22 percent of their time performing the Management and Supervisory tasks of Duty O and 14 percent performing the General Administrative and Technical Order tasks of Duty Q (Table 3). The members of this job perform an average of only 70 tasks, indicating their specialization in instructional duties. Representative of these limited tasks are:

- Conduct formal course classroom training
- Develop or procure training materials or aids
- Evaluate progress of trainees
- Inspect training materials or aids for operation or suitability
- Personalize lesson plans
- Develop performance tests
- Develop training programs, plans, or procedures
- Write test questions
- Develop formal course curricula, plans of instruction (POI), or specialty training standards (STSs)
- Establish or maintain study reference files
- Maintain training records or files

Eighty-eight percent of these job incumbents hold the 5-skill level, with 12 percent holding the 7-skill level (Table 4). These members average 9 1/2 years in the career field and 12 1/2 years in the service. The predominant paygrade is E-5.

TABLE 3

RELATIVE PERCENT TIME SPENT ON DUTIES BY SPECIALTY JOBS

DUTIES	Flightline				Instructor	
	Maint Cluster (ST020) (N=216)	Mgmt Job (ST019) (N=17)	UAV Job (ST032) (N=12)	Job (ST030) (N=8)		
A PERFORMING GENERAL COMMAND CONTROL COMMUNICATIONS AND NAVIGATION ACTIVITIES	2	1	1	*		
B MAINTAINING TEST OR SUPPORT EQUIPMENT	4	2	*	6		
C MAINTAINING COMMON COMMUNICATION SYSTEMS	22	4	*	4		
D MAINTAINING COMMON NAVIGATION SYSTEMS	25	5	1			
E MAINTAINING COMMON CRYPTOGRAPHIC DEVICES	6	1	0	5		
F MAINTAINING E-3 UNIQUE MISSION SYSTEMS	3	1	0	1		
G MAINTAINING E-4 UNIQUE MISSION SYSTEMS	10	1	1	1		
H MAINTAINING E-8 UNIQUE MISSION SYSTEMS	1	*	*	0		
I MAINTAINING EC-130 AIRBORNE BATTLEFIELD COMMAND AND CONTROL CENTER (ABCCC) UNIQUE MISSION SYSTEMS	6	0	1	0		
J MAINTAINING EC-135 UNIQUE MISSION SYSTEMS	2	*	0	*		
K MAINTAINING EC-130 COMPASS CALL UNIQUE MISSION SYSTEMS	1	*	0	0		
L MAINTAINING UNMANNED AEROSPACE VEHICLE (UAV) UNIQUE MISSION SYSTEMS	*	1	50	0		
M PERFORMING GENERAL AIRCRAFT ACTIVITIES	5	2	37	0		
N PERFORMING MAINTENANCE MANAGEMENT ACTIVITIES	3	11	1	1		
O PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	4	49	5	22		
P PERFORMING TRAINING ACTIVITIES	2	8	1	39		
Q PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	2	7	*	14		
R PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2	5	2	7		

* less than 1 percent

TABLE 4

SELECTED BACKGROUND DATA FOR SPECIALTY JOBS

	Flightline Maint Cluster (ST020)	Mgmt Job (ST019)	UAV Job (ST032)	Instructor Job (ST030)
NUMBER IN GROUP	216	17	12	8
PERCENT OF SAMPLE	79%	6%	4%	3%
PERCENT IN CONUS	88	82	100	100
DAFSC DISTRIBUTION:				
2A433	44	0	58	0
2A453	47	18	33	88
2A473	9	82	8	12
PREDOMINANT GRADE(S)	E-3 - E-5	E-6 - E-7	E-3	E-5
AVERAGE MONTHS IN CAREER FIELD	65	156	34	113
AVERAGE MONTHS IN SERVICE	84	203	56	150
PERCENT IN FIRST ENLISTMENT (1-48 MOS TAFMS)	47%	0	59%	0
PERCENT SUPERVISING	44%	94%	42%	37%
AVERAGE NUMBER OF TASKS PERFORMED	203	124	66	70

ANALYSIS OF DAFSC GROUPS

An analysis of DAFSC groups, in conjunction with the analysis of the career ladder structure, is an important part of each occupational survey. The DAFSC analysis identifies differences in tasks performed at the various skill levels. This information may then be used to evaluate how well career ladder documents, such as the AFMAN 36-2108 *Airman Classification*, Specialty Description and the Career Field Education and Training Plan (CFETP), reflect what career ladder personnel are actually doing in the field.

The distribution of skill-level groups across the career ladder jobs and clusters is displayed in Table 5, while Table 6 offers another perspective by displaying the relative percent time spent on each duty across skill-level groups. A somewhat typical pattern of progression is noted within the AFSC 2A4X3 career ladder. Personnel at the 3- and 5-skill levels work in the technical jobs of the career ladder and spend most of their time on technical tasks. As incumbents move up to the 7-skill level they begin to perform supervisory tasks, but still spend some of their time performing the technical tasks of the career ladder.

Skill-Level Descriptions

DAFSC 2A433 Representing 38 percent of the survey sample, these 103 airmen perform an average of 160 tasks. Ninety-one percent of this group work in the Flightline Maintenance Cluster (Table 5), with 7 percent performing in the UAV Job.

Table 6 reflects the percent time spent on duties by DAFSC 2A433 personnel. At the 3-skill level, their time is well distributed among the technical tasks of the career ladder. Representative tasks performed by these members are listed in Table 7.

DAFSC 2A453 The 125 members of this group account for 46 percent of the survey sample. Eighty-two percent work in the Flightline Maintenance Cluster (Table 5).

Table 6 provides a comparison of the relative time spent on duties at the 5-skill level. This table reflects a pattern similar to the 3-skill level, with fairly even distribution of members performing the technical tasks of the career ladder. As shown in this table, 5-skill level personnel begin to perform the supervisory tasks of Duty O.

Tables 8 lists representative tasks performed by these DAFSC 2A453 personnel. Table 9 reflects those tasks which best differentiate the 3-skill levels from the 5-skill levels. This table shows the 3-skill levels perform two technical tasks much more frequently than the 5-skill levels, while the 5-skill levels perform supervisory tasks not performed at the 3-skill level.

DAFSC 2A473 These 45 members perform an average of 172 tasks and represent 16 percent of the survey sample. Table 5 shows the highest percentage of members are in the Flightline Maintenance Cluster, while 31 percent perform in the Management Job.

Table 6 reflects the percent time spent on duties by DAFSC 2A473 members. The main point of this table is the decrease in the amount of time spent by members performing the technical tasks of Duties A-M, compared to the 3- and 5-skill level members, while increasing the time spent performing management and supervisory tasks.

Representative tasks performed by 7-skill level members are reflected in Tables 10. Table 11 reflects tasks which best differentiate between 5- and 7-skill levels. This table clearly shows the much higher devotion to management and supervisory tasks at the 7-skill level than the 5-skill level.

Summary

Progression in the Aircraft Command Control Communications and Navigation Systems career ladder follows a regular pattern of highly technical job focus at the lower skill levels, with a broadening into supervision and management at the 7-skill level. An emphasis is clearly seen performing primarily the core job of the career ladder at the 3- and 5-skill levels, with broadening into supervisory functions at the 7-skill level.

TABLE 5

DISTRIBUTION OF DAFSC GROUP MEMBERS ACROSS SPECIALTY JOBS
(PERCENT RESPONDING)

<u>SPECIALTY JOBS</u>	2A433 (N=103)	2A453 (N=125)	2A473 (N=45)
I. FLIGHTLINE MAINTENANCE CLUSTER	91	82	44
II. MANAGEMENT JOB	0	2	31
III. UNMANNED AEROSPACE VEHICLE JOB	7	3	2
IV. INSTRUCTOR JOB	0	6	2
NOT GROUPED	2	7	21

TABLE 6

RELATIVE PERCENT TIME SPENT ON DUTIES BY DAFSC GROUPS

DUTIES		2A433	2A453	2A473
		(N=103)	(N=125)	(N=45)
A	PERFORMING GENERAL COMMAND CONTROL COMMUNICATIONS AND NAVIGATION ACTIVITIES	3	2	1
B	MAINTAINING TEST OR SUPPORT EQUIPMENT	4	4	2
C	MAINTAINING COMMON COMMUNICATION SYSTEMS	23	18	10
D	MAINTAINING COMMON NAVIGATION SYSTEMS	26	19	11
E	MAINTAINING COMMON CRYPTOGRAPHIC DEVICES	6	6	3
F	MAINTAINING E-3 UNIQUE MISSION SYSTEMS	3	2	1
G	MAINTAINING E-4 UNIQUE MISSION SYSTEMS	7	9	8
H	MAINTAINING E-8 UNIQUE MISSION SYSTEMS	*	1	*
I	MAINTAINING EC-130 AIRBORNE BATTLEFIELD COMMAND AND CONTROL CENTER (ABCCC) UNIQUE MISSION SYSTEMS	7	3	3
J	MAINTAINING EC-135 UNIQUE MISSION SYSTEMS	2	2	1
K	MAINTAINING EC-130 COMPASS CALL UNIQUE MISSION SYSTEMS	2	*	1
L	MAINTAINING UNMANNED AEROSPACE VEHICLE (UAV) UNIQUE MISSION SYSTEMS	4	1	1
M	PERFORMING GENERAL AIRCRAFT ACTIVITIES	7	7	3
N	PERFORMING MAINTENANCE MANAGEMENT ACTIVITIES	2	4	9
O	PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	1	9	29
P	PERFORMING TRAINING ACTIVITIES	1	5	8
Q	PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	2	4	6
R	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2	3	2

* less than 1 percent

TABLE 7

REPRESENTATIVE TASKS PERFORMED BY 2A433 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=103)
A0010	Protect exposed electrical connectors	91
D0156	Perform operational checks of IFF transponders	90
C0075	Perform operational checks of HF communications equipment	89
C0096	Remove or install HF communications equipment LRUs	89
D0177	Remove or install IFF transponder LRUs	89
C0118	Troubleshoot interphones	88
C0117	Troubleshoot HF communications equipment	88
D0198	Troubleshoot IFF transponders	88
C0076	Perform operational checks of interphones	87
D0155	Perform operational checks of IFF Mode IV computers	87
C0097	Remove or install interphone LRUs	86
D0176	Remove or install IFF Mode IV computer LRUs	86
D0208	Troubleshoot VOR/ILS equipment	85
D0187	Remove or install VOR/ILS equipment LRUs	85
D0166	Perform operational checks of VOR/ILS equipment	84
D0197	Troubleshoot IFF Mode IV computers	82
D0158	Perform operational checks of marker beacon receivers	82
M0643	Wash aircraft	81
C0051	Inspect high frequency (HF) communications equipment	81
A0012	Protect exposed waveguides	81
D0135	Inspect IFF transponders	79
D0179	Remove or install marker beacon receiver LRUs	79
C0052	Inspect interphones	78
D0207	Troubleshoot search and weather radars	78
E0224	Perform operational checks of WBSV KY-58 cryptographic devices	78
E0232	Remove or install WBSV KY-58 cryptographic device LRUs	78
D0200	Troubleshoot marker beacon receivers	78
D0186	Remove or install search and weather radar equipment LRUs	77
E0216	Inspect wideband secure voice (WBSV) KY-58 cryptographic devices	77
D0169	Remove or install ARN-118 TACAN equipment LRUs	77
D0145	Inspect VOR/ILS equipment	76
D0168	Remove or install ADF equipment LRUs	76
C0069	Perform operational checks of ARC-186 VHF communications equipment	75
D0134	Inspect IFF Mode IV computers	75
D0147	Perform operational checks of ADF equipment	75
D0128	Inspect automatic direction finder (ADF) equipment	75
D0153	Perform operational checks of glide slope receivers	75
C0044	Inspect ARC-186 very high frequency (VHF) communications equipment	74
D0189	Troubleshoot ADF equipment	74
D0148	Perform operational checks of ARN-118 TACAN equipment	73
D0165	Perform operational checks of search and weather radars	72
B0013	Inspect cryptographic loading devices	72
D0190	Troubleshoot ARN-118 TACAN equipment	72

* Average Number of Tasks Performed - 160

TABLE 8

REPRESENTATIVE TASKS PERFORMED BY 2A453 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=125)
C0076	Perform operational checks of interphones	87
C0118	Troubleshoot interphones	86
A0010	Protect exposed electrical connectors	85
C0097	Remove or install interphone LRUs	84
D0156	Perform operational checks of IFF transponders	84
D0177	Remove or install IFF transponder LRUs	84
C0052	Inspect interphones	83
C0075	Perform operational checks of HF communications equipment	83
C0096	Remove or install HF communications equipment LRUs	83
C0117	Troubleshoot HF communications equipment	83
D0135	Inspect IFF transponders	82
C0051	Inspect high frequency (HF) communications equipment	82
D0198	Troubleshoot IFF transponders	82
D0155	Perform operational checks of IFF Mode IV computers	81
D0134	Inspect IFF Mode IV computers	79
D0197	Troubleshoot IFF Mode IV computers	79
D0176	Remove or install IFF Mode IV computer LRUs	79
D0187	Remove or install VOR/ILS equipment LRUs	79
D0166	Perform operational checks of VOR/ILS equipment	78
D0165	Perform operational checks of search and weather radars	77
D0207	Troubleshoot search and weather radars	77
B0013	Inspect cryptographic loading devices	77
D0145	Inspect VOR/ILS equipment	77
E0232	Remove or install WBSV KY-58 cryptographic device LRUs	77
E0224	Perform operational checks of WBSV KY-58 cryptographic devices	76
E0240	Troubleshoot WBSV KY-58 cryptographic devices	76
D0208	Troubleshoot VOR/ILS equipment	76
D0186	Remove or install search and weather radar equipment LRUs	75
E0216	Inspect wideband secure voice (WBSV) KY-58 cryptographic devices	74
D0158	Perform operational checks of marker beacon receivers	74
C0079	Perform operational checks of public address system equipment	74
A0012	Protect exposed waveguides	74
D0137	Inspect marker beacon receivers	74
D0179	Remove or install marker beacon receiver LRUs	74
D0168	Remove or install ADF equipment LRUs	74
D0147	Perform operational checks of ADF equipment	73
C0100	Remove or install public address system equipment LRUs	73
C0121	Troubleshoot public address system equipment	73
D0200	Troubleshoot marker beacon receivers	73
D0162	Perform operational checks of rendezvous beacons	72
M0642	Walk wings or tails during aircraft towing operations	71
D0143	Inspect search and weather radars	70
D0128	Inspect automatic direction finder (ADF) equipment	70
D0174	Remove or install glide slope receiver equipment LRUs	70

* Average Number of Tasks Performed - 192

TABLE 9

TASKS WHICH BEST DIFFERENTIATE BETWEEN
DAFSCs 2A433 AND 2A453 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	2A433 (N=103)	2A453 (N=125)	DIFF
C0070 Perform operational checks of ARC-187 SATCOM systems	40	18	22
D0169 Remove or install ARN-118 TACAN equipment LRUs	77	56	21
O0730 Supervise military personnel	6	59	-53
O0672 Counsel subordinates concerning personal matters	6	58	-52
O0713 Inspect personnel for compliance with military standards	6	54	-48
O0668 Conduct supervisory performance feedback sessions	3	50	-47
P0752 Evaluate progress of trainees	8	51	-43
O0733 Write performance reports or supervisory appraisals	2	43	-41
O0735 Write recommendations for awards or decorations	3	42	-39
O0692 Establish performance standards for subordinates	2	40	-38
O0714 Interpret policies, directives, or procedures for subordinates	1	38	-37
P0748 Evaluate personnel to determine training needs	6	42	-36
O0676 Determine or establish work assignments or priorities	7	41	-34
N0646 Clear Red-X conditions	5	38	-33
O0670 Conduct supervisory orientations for newly assigned personnel	5	37	-32
O0702 Evaluate personnel for compliance with performance standards	4	35	-31
O0666 Conduct self-inspections or self-assessments	4	35	-31
P0758 Schedule training	4	34	-30
O0703 Evaluate personnel for promotion, demotion, reclassification, or special awards	2	32	-30
P0746 Develop or procure training materials or aids	4	34	-30
O0684 Direct training functions	9	38	-29
P0755 Personalize lesson plans	1	30	-29
P0738 Brief personnel concerning training programs or matters	6	35	-29
O0681 Develop or establish work methods or procedures	4	33	-29

TABLE 10

REPRESENTATIVE TASKS PERFORMED BY 2A473 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=45)
O0730 Supervise military personnel	80
O0717 Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	80
O0713 Inspect personnel for compliance with military standards	78
O0672 Counsel subordinates concerning personal matters	78
N0655 Retrieve CAMS listings or reports	76
O0668 Conduct supervisory performance feedback sessions	76
O0676 Determine or establish work assignments or priorities	73
O0733 Write performance reports or supervisory appraisals	73
O0702 Evaluate personnel for compliance with performance standards	71
O0714 Interpret policies, directives, or procedures for subordinates	67
O0728 Schedule work assignments or priorities	67
P0759 Schedule personnel for training	67
P0754 Maintain training records or files	67
P0748 Evaluate personnel to determine training needs	67
C0052 Inspect interphones	67
D0135 Inspect IFF transponders	67
O0682 Develop or establish work schedules	64
O0735 Write recommendations for awards or decorations	64
P0742 Determine training requirements	62
O0705 Evaluate work schedules	62
N0653 Initiate technical order improvement reports	62
C0051 Inspect high frequency (HF) communications equipment	62
D0134 Inspect IFF Mode IV computers	62
D0145 Inspect VOR/ILS equipment	62
N0645 Analyze core automated maintenance system (CAMS) data	60
O0692 Establish performance standards for subordinates	60
O0669 Conduct safety inspections of equipment or facilities	60
N0646 Clear Red-X conditions	60
O0666 Conduct self-inspections or self-assessments	60
E0216 Inspect wideband secure voice (WBSV) KY-58 cryptographic devices	60
D0137 Inspect marker beacon receivers	60
P0758 Schedule training	58
O0703 Evaluate personnel for promotion, demotion, reclassification, or special awards	58
O0706 Evaluate workload requirements	58
P0738 Brief personnel concerning training programs or matters	58
O0670 Conduct supervisory orientations for newly assigned personnel	58
C0118 Troubleshoot interphones	58
O0681 Develop or establish work methods or procedures	56
O0665 Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	56
P0752 Evaluate progress of trainees	56
D0128 Inspect automatic direction finder (ADF) equipment	56

* Average Number of Tasks Performed - 173

TABLE 11

TASKS WHICH BEST DIFFERENTIATE BETWEEN
DAFSCs 2A453 AND 2A473 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	2A453 (N=125)	2A473 (N=45)	DIFF
M0642 Walk wings or tails during aircraft towing operations	71	27	44
D0162 Perform operational checks of rendezvous beacons	72	36	36
C0076 Perform operational checks of interphones	87	51	36
M0643 Wash aircraft	62	27	35
D0187 Remove or install VOR/ILS equipment LRUs	79	44	35
D0174 Remove or install glide slope receiver equipment LRUs	70	36	34
C0079 Perform operational checks of public address system equipment	74	40	34
C0121 Troubleshoot public address system equipment	73	40	33
C0100 Remove or install public address system equipment LRUs	73	40	33
C0096 Remove or install HF communications equipment LRUs	83	51	32
D0166 Perform operational checks of VOR/ILS equipment	78	47	31
A0010 Protect exposed electrical connectors	84	53	31
O0665 Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	16	56	-40
O0717 Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	41	80	-39
P0759 Schedule personnel for training	30	67	-37
O0728 Schedule work assignments or priorities	30	67	-37
O0706 Evaluate workload requirements	22	58	-36
O0702 Evaluate personnel for compliance with performance standards	35	71	-36
O0705 Evaluate work schedules	26	62	-36
O0682 Develop or establish work schedules	31	64	-33
O0676 Determine or establish work assignments or priorities	41	73	-32
O0674 Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	22	53	-31
O0709 Indorse performance reports or supervisory appraisals	7	38	-31

TRAINING ANALYSIS

Occupational survey data are one of many sources of information which can be used to assist in the development of a training program relevant to the needs of personnel in their first enlistment. Factors which may be used in evaluating training include the overall description of the work being performed by first-job or first-enlistment personnel and their overall distribution across career ladder jobs, percentages of first-job (1-18 months TAFMS) or first-enlistment (1-48 months TAFMS) members performing specific tasks, as well as TE and TD ratings (previously explained in the **SURVEY METHODOLOGY** section).

First-Enlistment Personnel

This study has only 42 members in their first-job assignment (1-18 months TAFMS), representing 15 percent of the survey sample. Table 12 displays the relative time spent on duties by first-job personnel. As seen in this table, first-job personnel spend 47 percent of their time performing the Common Communications and Navigation tasks of duties C and D, with smaller percentages of time spread across the aircraft specific areas of the job inventory. Table 13 lists representative tasks performed by these first-job personnel and reflects the technical job of these newly assigned personnel.

There are 109 members in their first-enlistment, representing a very high 40 percent of the total survey sample. Figure 2 reflects the distribution of first-enlistment personnel within the career ladder. Table 14 displays the relative percent of time spent on duties by first-enlistment personnel. Reviewing the table, first-enlistment personnel spend 49 percent of their time performing the Common Communications and Navigation tasks of Duties C and D. First-enlistment personnel are primarily employed in the Flightline Maintenance Cluster, with representative tasks performed displayed in Table 15.

Table 16 reflects the Test Equipment used by first-enlistment respondents, while Table 17 lists the Support Equipment used by first-enlistment airmen.

**DISTRIBUTION OF 2A4X3 FIRST-ENLISTMENT PERSONNEL
ACROSS SPECIALTY JOBS
(N = 109)**

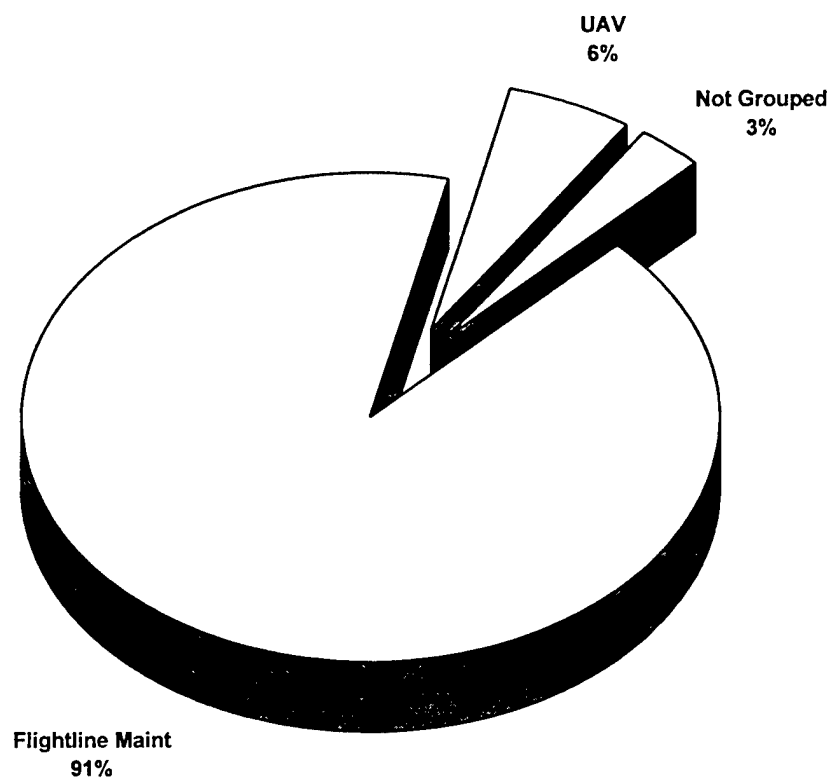


FIGURE 2

TABLE 12

RELATIVE PERCENT TIME SPENT ON DUTIES BY
FIRST-JOB PERSONNEL (1-18 MONTHS TAFMS)
(N=42)

DUTIES	PERCENT TIME SPENT
A PERFORMING GENERAL COMMAND CONTROL COMMUNICATIONS AND NAVIGATION ACTIVITIES	3
B MAINTAINING TEST OR SUPPORT EQUIPMENT	4
C MAINTAINING COMMON COMMUNICATIONS SYSTEMS	22
D MAINTAINING COMMON NAVIGATION SYSTEMS	25
E MAINTAINING COMMON CRYPTOGRAPHIC DEVICES	5
F MAINTAINING E-3 UNIQUE MISSION SYSTEMS	1
G MAINTAINING E-4 UNIQUE MISSION SYSTEMS	5
H MAINTAINING E-8 UNIQUE MISSION SYSTEMS	*
I MAINTAINING EC-130 AIRBORNE BATTLEFIELD COMMAND AND CONTROL CENTER (ABCCC) UNIQUE MISSION SYSTEMS	7
J MAINTAINING EC-135 UNIQUE MISSION SYSTEMS	1
K MAINTAINING EC-130 COMPASS CALL UNIQUE MISSION SYSTEMS	1
L MAINTAINING UNMANNED AEROSPACE VEHICLE (UAV) UNIQUE MISSION SYSTEMS	7
M PERFORMING GENERAL AIRCRAFT ACTIVITIES	11
N PERFORMING MAINTENANCE MANAGEMENT ACTIVITIES	3
O PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	*
P PERFORMING TRAINING ACTIVITIES	*
Q PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	2
R PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2

TABLE 13

REPRESENTATIVE TASKS PERFORMED BY AFSC 2A4X3
FIRST-JOB PERSONNEL (1-18 MONTHS TAFMS)

TASKS		PERCENT MEMBERS PERFORMING (N=42)
C0076	Perform operational checks of interphones	86
A0010	Protect exposed electrical connectors	86
M0643	Wash aircraft	83
C0075	Perform operational checks of HF communications equipment	83
C0097	Remove or install interphone LRUs	83
C0096	Remove or install HF communications equipment LRUs	83
D0177	Remove or install IFF transponder LRUs	83
C0118	Troubleshoot interphones	81
D0156	Perform operational checks of IFF transponders	81
C0117	Troubleshoot HF communications equipment	81
D0198	Troubleshoot IFF transponders	79
C0052	Inspect interphones	76
C0051	Inspect high frequency (HF) communications equipment	76
A0012	Protect exposed waveguides	76
D0187	Remove or install VOR/ILS equipment LRUs	76
D0208	Troubleshoot VOR/ILS equipment	76
D0166	Perform operational checks of VOR/ILS equipment	74
E0232	Remove or install WBSV KY-58 cryptographic device LRUs	74
D0148	Perform operational checks of ARN-118 TACAN equipment	71
C0044	Inspect ARC-186 very high frequency (VHF) communications equipment	71
D0155	Perform operational checks of IFF Mode IV computers	71
D0135	Inspect IFF transponders	71
D0128	Inspect automatic direction finder (ADF) equipment	71
D0169	Remove or install ARN-118 TACAN equipment LRUs	71
M0642	Walk wings or tails during aircraft towing operations	69
C0087	Remove or install ARC-164 UHF communications equipment LRUs	69
C0108	Troubleshoot ARC-164 UHF communications equipment	69
E0224	Perform operational checks of WBSV KY-58 cryptographic devices	69
D0176	Remove or install IFF Mode IV computer LRUs	69
C0089	Remove or install ARC-186 VHF communications equipment LRUs	67
B0013	Inspect cryptographic loading devices	67
E0216	Inspect wideband secure voice (WBSV) KY-58 cryptographic devices	67
D0145	Inspect VOR/ILS equipment	67
D0158	Perform operational checks of marker beacon receivers	67
D0190	Troubleshoot ARN-118 TACAN equipment	67
C0069	Perform operational checks of ARC-186 VHF communications equipment	64
C0042	Inspect ARC-164 UHF communications equipment	64
D0186	Remove or install search and weather radar equipment LRUs	64
D0126	Inspect ARN-118 TACAN equipment	64

* Average Number of Tasks Performed - 138

TABLE 14

RELATIVE PERCENT TIME SPENT ON DUTIES BY
FIRST-ENLISTMENT PERSONNEL
(N=109)

DUTIES	PERCENT TIME SPENT
A PERFORMING GENERAL COMMAND CONTROL COMMUNICATIONS AND NAVIGATION ACTIVITIES	3
B MAINTAINING TEST OR SUPPORT EQUIPMENT	4
C MAINTAINING COMMON COMMUNICATIONS SYSTEMS	23
D MAINTAINING COMMON NAVIGATION SYSTEMS	26
E MAINTAINING COMMON CRYPTOGRAPHIC DEVICES	6
F MAINTAINING E-3 UNIQUE MISSION SYSTEMS	3
G MAINTAINING E-4 UNIQUE MISSION SYSTEMS	8
H MAINTAINING E-8 UNIQUE MISSION SYSTEMS	*
I MAINTAINING EC-130 AIRBORNE BATTLEFIELD COMMAND AND CONTROL CENTER (ABCCC) UNIQUE MISSION SYSTEMS	6
J MAINTAINING EC-135 UNIQUE MISSION SYSTEMS	2
K MAINTAINING EC-130 COMPASS CALL UNIQUE MISSION SYSTEMS	2
L MAINTAINING UNMANNED AEROSPACE VEHICLE (UAV) UNIQUE MISSION SYSTEMS	3
M PERFORMING GENERAL AIRCRAFT ACTIVITIES	7
N PERFORMING MAINTENANCE MANAGEMENT ACTIVITIES	2
O PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	*
P PERFORMING TRAINING ACTIVITIES	1
Q PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	2
R PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2

TABLE 15

REPRESENTATIVE TASKS PERFORMED BY AFSC 2A4X3
FIRST-ENLISTMENT PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=109)
A0010	Protect exposed electrical connectors	93
C0096	Remove or install HF communications equipment LRUs	91
D0156	Perform operational checks of IFF transponders	91
D0177	Remove or install IFF transponder LRUs	91
C0075	Perform operational checks of HF communications equipment	90
C0076	Perform operational checks of interphones	89
C0118	Troubleshoot interphones	89
C0117	Troubleshoot HF communications equipment	89
D0198	Troubleshoot IFF transponders	89
D0155	Perform operational checks of IFF Mode IV computers	87
C0097	Remove or install interphone LRUs	87
D0166	Perform operational checks of VOR/ILS equipment	86
D0176	Remove or install IFF Mode IV computer LRUs	86
D0187	Remove or install VOR/ILS equipment LRUs	86
D0208	Troubleshoot VOR/ILS equipment	85
M0643	Wash aircraft	83
D0158	Perform operational checks of marker beacon receivers	83
D0197	Troubleshoot IFF Mode IV computers	82
A0012	Protect exposed waveguides	82
C0051	Inspect high frequency (HF) communications equipment	81
D0135	Inspect IFF transponders	80
D0179	Remove or install marker beacon receiver LRUs	80
C0052	Inspect interphones	79
D0186	Remove or install search and weather radar equipment LRUs	79
D0207	Troubleshoot search and weather radars	79
D0200	Troubleshoot marker beacon receivers	79
E0224	Perform operational checks of WBSV KY-58 cryptographic devices	78
E0232	Remove or install WBSV KY-58 cryptographic device LRUs	78
D0134	Inspect IFF Mode IV computers	76
D0128	Inspect automatic direction finder (ADF) equipment	76
D0145	Inspect VOR/ILS equipment	76
D0169	Remove or install ARN-118 TACAN equipment LRUs	75
E0216	Inspect wideband secure voice (WBSV) KY-58 cryptographic devices	75
D0153	Perform operational checks of glide slope receivers	75
D0168	Remove or install ADF equipment LRUs	75
C0069	Perform operational checks of ARC-186 VHF communications equipment	73
D0165	Perform operational checks of search and weather radars	73
D0147	Perform operational checks of ADF equipment	73
D0148	Perform operational checks of ARN-118 TACAN equipment	72

* Average Number of Tasks Performed -159

TABLE 16

TEST EQUIPMENT USED BY
FIRST-ENLISTMENT AFSC 2A4X3 PERSONNEL

EQUIPMENT	1ST ENL (N=109)
Digital Multimeter	94
Wattmeter	91
IFF Transponder Test Set	90
VOR/ILS Test Set	88
Tactical Air Navigation (TACAN) Test Set	81
Radio Altimeter Test Set	62
Reflectometer	60
Oscilloscope	56
Analog Multimeter	55
Spectrum Analyzer	42
Radar Test Set	41
Signal Generator	36
Frequency Counter	34
Selective Level Meter	33
Synthesizer/Level Generator	32
Radio Frequency Transmit Line Test Set	31

TABLE 17

SUPPORT EQUIPMENT USED OR OPERATED BY
FIRST-ENLISTMENT AFSC 2A4X3 PERSONNEL

EQUIPMENT	1ST ENL (N=109)
Air-Conditioning Unit	38
Cherry Picker	41
External Power Unit	64
Ground Heater and Blower	37
Maintenance Stand	85
NF-2 Light Cart	36
Universal Maintenance Stand	42

Training Emphasis (TE) and Task Difficulty (TD) Data

TE and TD data are secondary factors that can assist technical school personnel in deciding which tasks should be emphasized in entry-level training. These ratings, based on the judgments of senior career ladder NCOs working at operational units in the field, are collected to provide training personnel with a rank-ordering of those tasks in the JI considered important for first-enlistment personnel training (see Table 18 for the top-rated tasks), along with a measure of the difficulty of the JI tasks (see high rated tasks presented in Table 19). When combined with data on the percentages of first-enlistment personnel performing tasks, comparisons can then be made to determine if training adjustments are necessary. For example, tasks receiving high ratings on both task factors, accompanied by moderate to high percentages performing, may warrant resident training. Those tasks receiving high task factor ratings, but low percentages performing, may be more appropriately planned for OJT programs within the career ladder. Low task factor ratings may highlight tasks best omitted from training for first-enlistment personnel, but this decision must be weighed against percentages of personnel performing the tasks, command concerns, and criticality of the tasks.

To assist technical school personnel, AFOMS has developed a computer program that incorporates these secondary factors and the percentage of first-enlistment personnel performing each task to produce an Automated Training Indicator (ATI) for each task. These indicators correspond to training decisions listed and defined in the Training Decision Logic Table found in Attachment 2, AETCI 36-2601, and allows course personnel to quickly focus their attention on those tasks which are most likely to qualify for initial resident course consideration.

Table 18 presents tasks with the highest TE ratings for AFSC 2A4X3 first-enlistment airmen, while Table 19 displays those tasks AFSC 2A4X3 raters judged to be most difficult to learn. For example, TE raters (refer to Table 18) reported that tasks such as performing operational checks of HF communications equipment and interphones require a high degree of training emphasis and, from the data, most airmen in their first job and within their first enlistment are performing these tasks. Table 19 shows TD raters reported troubleshooting ALCSS to be among the most difficult tasks to learn. However, due to the low numbers of individuals performing these types of tasks, they would be inappropriate for inclusion in a resident curriculum and are more appropriately taught as OJT items.

Various lists of tasks, accompanied by TE and TD ratings, and where appropriate, ATI information, are contained in the TRAINING EXTRACT package and should be reviewed in detail by training school personnel. (For a more detailed explanation of TE and TD ratings, see Task Factor Administration in the **SURVEY METHODOLOGY** section of this report.)

TABLE 18

TASKS RATED HIGHEST IN TRAINING EMPHASIS

TASKS	PERCENT MEMBERS PERFORMING				
	TNG	IST	IST		TASK
		JOB (N=42)	ENL	(N =109)	
C0075	6.29	83	90	5.20	Perform operational checks of HF communications equipment
C0076	6.20	86	89	4.88	Perform operational checks of interphones
D0165	5.77	57	73	5.83	Perform operational checks of search and weather radars
D0156	5.60	81	91	4.73	Perform operational checks of IFF transponders
D0155	5.60	71	87	4.75	Perform operational checks of IFF Mode IV computers
C0117	5.46	81	89	6.32	Troubleshoot HF communications equipment
C0096	5.43	83	91	5.14	Remove or install HF communications equipment LRUs
D0198	5.37	79	89	5.29	Troubleshoot IFF transponders
D0197	5.37	64	82	5.15	Troubleshoot IFF Mode IV computers
C0118	5.29	81	89	6.02	Troubleshoot interphones
E0224	5.29	69	78	5.57	Perform operational checks of WBSV KY-58 cryptographic devices
D0177	5.23	83	91	3.95	Remove or install IFF transponder LRUs
D0176	5.23	69	86	4.02	Remove or install IFF Mode IV computer LRUs
C0097	5.14	83	87	3.88	Remove or install interphone LRUs
A0012	5.14	76	82	2.35	Protect exposed waveguides
A0010	5.06	86	93	1.91	Protect exposed electrical connectors
D0166	5.03	74	86	4.86	Perform operational checks of VOR/ILS equipment
C0051	4.91	76	81	5.13	Inspect high frequency (HF) communications equipment
C0052	4.89	76	79	4.22	Inspect interphones
E0240	4.86	62	70	5.76	Troubleshoot WBSV KY-58 cryptographic devices
D0207	4.80	62	79	6.08	Troubleshoot search and weather radars
E0232	4.77	74	78	3.78	Remove or install WBSV KY-58 cryptographic device LRUs
D0135	4.71	71	80	3.89	Inspect IFF transponders
C0069	4.71	64	73	4.67	Perform operational checks of ARC-186 VHF communications equipment
D0186	4.71	64	79	5.50	Remove or install search and weather radar equipment LRUs

* Mean TE Rating is 1.49, and Standard Deviation is 1.25 (High TE = 2.74)

** Average TD Rating is 5.00

TABLE 19

TASKS RATED HIGHEST IN TASK DIFFICULTY

TASKS	TASK DIFF	1ST JOB (N=42)	1ST ENL (N=109)	PERCENT MEMBERS PERFORMING			TNG EMP
				3-SKL LVL (N=103)	5-SKL LVL (N=125)	7-SKL LVL (N=45)	
J0516	8.05	10	11	9	22	13	1.20
J0512	7.84	7	8	8	13	4	1.00
J0506	7.72	10	12	10	22	13	1.31
J0513	7.59	7	9	8	22	11	1.00
J0503	7.42	7	9	9	21	11	1.31
G0360	7.35	5	16	13	22	20	1.11
P0744	7.26	0	1	2	22	24	.63
J0502	7.25	7	8	8	14	4	1.11
C0119	7.23	7	17	19	16	11	2.23
C0122	7.19	29	21	22	34	13	1.89
P0743	7.19	0	0	0	14	18	.17
G0376	7.13	0	3	2	15	20	1.09
F0279	7.12	7	17	18	20	4	2.17
G0316	6.96	2	8	6	26	20	1.37
C0059	6.94	55	50	54	36	27	4.40
O0729	6.91	2	2	2	5	4	.37
N0650	6.90	0	4	5	24	42	.66
C0111	6.86	21	33	35	22	18	1.77
G0324	6.85	0	3	2	15	18	1.46
C0080	6.83	29	19	18	34	18	1.91
C0077	6.82	7	17	18	16	11	2.83
G0368	6.81	2	8	6	25	18	1.11
G0361	6.81	0	5	3	17	9	.86
G0321	6.79	12	18	16	22	22	1.49
C0060	6.78	33	30	33	28	11	2.86
G0363	6.77	5	11	9	18	16	1.11

* Mean TE Rating is 1.49, and Standard Deviation is 1.25 (High TE = 2.74)

** Average TD Rating is 5.00

Specialty Training Standard (STS)

A comprehensive review of STS 2A4X3, dated October 1995, compared STS items to survey data (based on the previously mentioned assistance from subject-matter experts in matching JI tasks to STS elements). STS elements containing general knowledge information, mandatory entries, subject-matter-knowledge-only requirements, or basic supervisory responsibilities were not examined. Task knowledge and performance elements of the STS were compared against the standard set forth in AETCI 36-2601 and AFI 36-2623 (i.e., include tasks performed or knowledge required by 20 percent or more of the personnel in a skill level [criterion group] of the AFS).

The 2A4X3 STS is divided into mission specific aircraft sections with many systems listed in more than one section. The STS analysis identified over 150 elements with 20 percent of TAFMS group members performing that are dashed and are suggested for review to determine if formal training is required. Table 20 is a sample of some of these elements performed by a large percentage of the members and dashed in the STS.

Tasks not referenced to any element of the STS are listed at the end of the STS computer listing of the Training Extract. These tasks were reviewed to determine if there were any tasks concentrated around any particular function or job. There were no significant technical tasks that were not matched to an STS element.

TABLE 20

**EXAMPLES OF TECHNICAL TASKS PERFORMED BY AFSC 2A4X3 GROUP MEMBERS
SUGGESTED FOR PROFICIENCY CODE REVIEW TO PERFORMANCE CODING
(PERCENT MEMBERS PERFORMING)**

TASKS	TNG EMP	PERCENT MEMBERS PERFORMING			TASK DIFF	ATI
		3-SKL LVL (N=103)	5-SKL LVL (N=125)	7-SKL LVL (N=45)		
15.d						
15.d.(3)						
C0069						
Perform operational checks of ARC-186 VHF communications equipment	4.71	75	59	36	4.67	18
15.d.(4)						
C0110						
Troubleshoot ARC-186 VHF communications equipment	4.29	70	54	36	5.31	18
15.d.(5)						
C0089						
Remove or install ARC-186 VHF communications equipment LRUs	4.14	69	58	38	4.03	18
15.h.(2)						
15.h.(2)(c)						
E0222						
Perform operational checks of NBSV ANDVT cryptographic device equipment	4.63	59	62	38	5.70	18
15.h.(2)(d)						
E0238						
Troubleshoot NBSV ANDVT cryptographic device equipment	4.31	54	59	38	6.00	18
15.h.(2)(e)						
E0230						
Remove or install NBSV ANDVT cryptographic device equipment LRUs	4.00	61	62	38	4.07	18
15.h.(2)(f)						
E0215						
Inspect Installed Equipment						
Inspect NBSV ANDVT cryptographic device equipment	3.74	52	58	47	4.16	18

* Mean TE Rating is 1.49, and Standard Deviation is 1.25 (High TE = 2.74)

** Average TD Rating is 5.00

JOB SATISFACTION ANALYSIS

An examination of the job satisfaction indicators of various groups can give career ladder managers a better understanding of some of the factors which may affect the job performance of airmen in the career ladder. Attitude questions covering job interest, perceived utilization of talents and training, sense of accomplishment from work, and reenlistment intentions were included in the survey booklet to provide indications of job satisfaction.

Table 21 presents job satisfaction data for AFSC 2A4X3 TAFMS groups, together with TAFMS data for a comparative sample of Mission Equipment Management career ladders surveyed in 1997. First-enlistment personnel rated perception of job interest, utilization of talents, and sense of accomplishment gained from work higher than the comparative sample. They also have lower reenlistment intentions than the comparative sample. Second-enlistment personnel rated all areas lower than the comparative sample, including reenlistment intentions. Career airmen (those over 8 years TAFMS), rated all areas lower than the comparative sample with the exception of reenlistment intentions, which they rated virtually the same. All TAFMS groups rate perceived utilization of training much lower than the comparative sample.

In Table 22, a review of the job satisfaction ratings for the specialty jobs and clusters identified in this survey reveals very low satisfaction ratings for all areas among the UAV Job members. It is interesting to note the low ratings for most areas for the members of the Management Cluster.

TABLE 21

COMPARISON OF JOB SATISFACTION INDICATORS BY TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)

	1-48 MOS TAFMS		49-96 MOS TAFMS		97+ MOS TAFMS	
	1998 2A4X3 (N=109)	COMP SAMPLE* (N=3,883)	1998 2A4X3 (N=38)	COMP SAMPLE* (N=2,651)	1998 2A4X3 (N=120)	COMP SAMPLE* (N=6,033)
EXPRESSED JOB INTEREST:						
INTERESTING	71	65	61	65	73	74
SO-SO	16	19	21	20	18	17
DULL	13	16	18	15	9	9
PERCEIVED UTILIZATION OF TALENTS:						
FAIRLY WELL TO PERFECTLY	75	72	74	75	81	83
LITTLE OR NOT AT ALL	25	28	26	25	19	17
PERCEIVED UTILIZATION OF TRAINING:						
FAIRLY WELL TO PERFECTLY	78	85	68	82	72	80
LITTLE OR NOT AT ALL	22	15	32	18	28	20
SENSE OF ACCOMPLISHMENT GAINED FROM WORK:						
SATISFIED	69	64	63	66	63	72
NEUTRAL	12	17	8	15	13	11
DISSATISFIED	19	19	29	19	24	17
REENLISTMENT INTENTIONS:						
YES, OR PROBABLY YES	46	52	58	66	72	71
NO, OR PROBABLY NO	54	48	42	34	7	8
PLAN TO RETIRE	0	0	0	0	21	21

* Comparative sample of Mission Equipment Management career ladders surveyed in 1997 include the 2A3X2A/B/C, 2A5X3A/B/C, 2A6X3, 2A6X5, 2A6X6, 2A7X1, 2A7X3, 2E1X1, 2E8X1, and 2W0X1 AFSCs.

TABLE 22

COMPARISON OF JOB SATISFACTION INDICATORS BY SPECIALTY JOBS
(PERCENT MEMBERS RESPONDING)

	Flightline Maint Cluster (ST020) (N=216)	Management Job (ST019) (N=17)	UAV Job (ST032) (N=12)	Instructor Job (ST030) (N=8)
<u>EXPRESSED JOB INTEREST:</u>				
INTERESTING	72	59	50	63
SO-SO	18	24	0	12
DULL	10	18	50	25
<u>PERCEIVED UTILIZATION OF TALENTS:</u>				
FAIRLY WELL TO PERFECTLY	80	76	33	50
LITTLE OR NOT AT ALL	20	24	67	50
<u>PERCEIVED UTILIZATION OF TRAINING:</u>				
FAIRLY WELL TO PERFECTLY	81	59	8	62
LITTLE OR NOT AT ALL	19	41	92	38
<u>SENSE OF ACCOMPLISHMENT GAINED FROM WORK:</u>				
SATISFIED	68	59	42	62
NEUTRAL	12	6	8	0
DISSATISFIED	20	35	50	38
<u>REENLISTMENT INTENTIONS:</u>				
YES, OR PROBABLY YES	60	59	42	75
NO, OR PROBABLY NO	34	6	58	0
WILL RETIRE	6	35	0	25

IMPLICATIONS

This survey was initiated to provide current job and task data for use in evaluating the AFMAN 36-2108 *Specialty Description* and appropriate training documents.

Survey results clearly indicate that the present classification structure, as described in the latest specialty description, accurately portrays the jobs performed in this career ladder. Based on survey data, the career ladder training documents require review to ensure appropriate proficiency coding. The career ladder progression is typical, with the move from technical work at the 3- and 5-skill levels to supervisory and management tasks at the 7-skill level. Job satisfaction is slightly higher for first-enlistment and slightly lower for second-enlistment members than the comparative sample of like maintenance AFSCs. All TAFMS groups rate perceived utilization of training lower than the comparative sample, reenforcing the recommendation for a review of the STS.

APPENDIX A

SELECTED REPRESENTATIVE TASKS PERFORMED BY SPECIALTY JOB GROUPS

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TABLE A1

Flightline Maintenance Cluster (ST020)

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
C0118	Troubleshoot interphones	98
D0156	Perform operational checks of IFF transponders	98
C0117	Troubleshoot HF communications equipment	98
C0096	Remove or install HF communications equipment LRUs	98
C0097	Remove or install interphone LRUs	97
C0075	Perform operational checks of HF communications equipment	97
D0177	Remove or install IFF transponder LRUs	97
C0076	Perform operational checks of interphones	96
D0155	Perform operational checks of IFF Mode IV computers	96
D0198	Troubleshoot IFF transponders	96
D0176	Remove or install IFF Mode IV computer LRUs	95
C0051	Inspect high frequency (HF) communications equipment	93
D0197	Troubleshoot IFF Mode IV computers	93
D0166	Perform operational checks of VOR/ILS equipment	93
A0010	Protect exposed electrical connectors	93
D0187	Remove or install VOR/ILS equipment LRUs	93
D0208	Troubleshoot VOR/ILS equipment	92
C0052	Inspect interphones	91
D0135	Inspect IFF transponders	91
D0207	Troubleshoot search and weather radars	89
E0224	Perform operational checks of WBSV KY-58 cryptographic devices	89
D0134	Inspect IFF Mode IV computers	88
D0145	Inspect VOR/ILS equipment	88
E0232	Remove or install WBSV KY-58 cryptographic device LRUs	88
D0158	Perform operational checks of marker beacon receivers	88
D0186	Remove or install search and weather radar equipment LRUs	87
E0216	Inspect wideband secure voice (WBSV) KY-58 cryptographic devices	87
D0147	Perform operational checks of ADF equipment	86
D0168	Remove or install ADF equipment LRUs	86
D0179	Remove or install marker beacon receiver LRUs	86
D0165	Perform operational checks of search and weather radars	85
D0200	Troubleshoot marker beacon receivers	85
A0012	Protect exposed waveguides	85
E0240	Troubleshoot WBSV KY-58 cryptographic devices	84
D0137	Inspect marker beacon receivers	84
D0128	Inspect automatic direction finder (ADF) equipment	83
D0189	Troubleshoot ADF equipment	83
D0153	Perform operational checks of glide slope receivers	81
C0079	Perform operational checks of public address system equipment	81
B0013	Inspect cryptographic loading devices	80
C0100	Remove or install public address system equipment LRUs	79
D0143	Inspect search and weather radars	78
D0174	Remove or install glide slope receiver equipment LRUs	78
D0195	Troubleshoot glide slope receivers	78

TABLE A2

Management Job (ST019)

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
O0730	Supervise military personnel	100
O0702	Evaluate personnel for compliance with performance standards	100
O0672	Counsel subordinates concerning personal matters	100
O0682	Develop or establish work schedules	94
O0713	Inspect personnel for compliance with military standards	94
O0668	Conduct supervisory performance feedback sessions	94
O0676	Determine or establish work assignments or priorities	88
O0717	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	88
O0714	Interpret policies, directives, or procedures for subordinates	88
O0733	Write performance reports or supervisory appraisals	88
O0692	Establish performance standards for subordinates	82
O0705	Evaluate work schedules	82
O0728	Schedule work assignments or priorities	76
O0706	Evaluate workload requirements	76
O0735	Write recommendations for awards or decorations	76
P0759	Schedule personnel for training	76
Q0787	Review technical order changes	76
O0712	Initiate actions required due to substandard performance of personnel	76
N0655	Retrieve CAMS listings or reports	71
O0663	Assign personnel to work areas or duty positions	71
O0708	Evaluate maintenance or utilization of equipment, tools, parts, supplies, or workspace	71
N0645	Analyze core automated maintenance system (CAMS) data	71
O0669	Conduct safety inspections of equipment or facilities	71
P0754	Maintain training records or files	71
O0703	Evaluate personnel for promotion, demotion, reclassification, or special awards	71
P0748	Evaluate personnel to determine training needs	71
O0674	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	71
O0666	Conduct self-inspections or self-assessments	71
O0670	Conduct supervisory orientations for newly assigned personnel	71
P0742	Determine training requirements	65
O0698	Evaluate job or position descriptions	65
O0665	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	65
N0661	Verify accuracy of CAMS daily inputs	59
O0681	Develop or establish work methods or procedures	59
N0656	Review preventive maintenance schedules	59
O0726	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	59
P0738	Brief personnel concerning training programs or matters	59
N0651	Identify problem areas, other than equipment or supply, using deficiency, service, or status reports	59
N0649	Evaluate equipment development or modification data	59
O0732	Write job or position descriptions	59

TABLE A3
Unmanned Aerospace Vehicle (UAV) Job (ST032)

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
M0605	Perform preflight inspections	100
L0569	Remove or install UAV engines or engine components	100
L0552	Inspect UAV engines or engine components	100
L0555	Inspect UAV landing gear system components	100
L0544	Inspect UAV aircraft fuel system components	100
L0542	Inspect UAV aircraft cameras	100
L0549	Inspect UAV engine cooling system components	100
L0550	Inspect UAV engine ignition system components	100
L0560	Remove or install UAV aircraft cameras	100
M0611	Refuel or defuel aircraft	92
M0578	Assist in aircraft engine removal or installation	92
L0553	Inspect UAV flight control system components	92
M0579	Assist in aircraft weight and balance functions	92
L0567	Remove or install UAV engine ignition system components	92
L0559	Remove or install UAV aircraft brake system components	92
L0547	Inspect UAV electrical power and distribution system components	92
L0545	Inspect UAV aircraft lighting system components	92
L0573	Remove or install UAV landing gear system components	92
M0642	Walk wings or tails during aircraft towing operations	83
M0609	Position or remove aircraft chocks	83
M0600	Perform ground engine runs	83
L0551	Inspect UAV engine lubrication system components	83
L0541	Inspect unmanned aerospace vehicle (UAV) aircraft brake system components	83
L0562	Remove or install UAV aircraft fuel system components	83
M0630	Service aircraft tires	83
L0546	Inspect UAV C-band airborne datalink system components	83
M0603	Perform postflight inspections	75
L0577	Set up or pack out UAV ground control stations	58
M0613	Remove or install aircraft doors or panels	58
L0557	Inspect UAV pilot payload operations (PPO) workstation components	58

TABLE A4

Instructor Job (ST030)

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
P0740	Conduct formal course classroom training	100
P0746	Develop or procure training materials or aids	100
P0752	Evaluate progress of trainees	100
P0753	Inspect training materials or aids for operation or suitability	100
P0755	Personalize lesson plans	100
P0744	Develop performance tests	100
P0745	Develop training programs, plans, or procedures	100
P0760	Write test questions	100
P0743	Develop formal course curricula, plans of instruction (POI), or specialty training standards (STSS)	100
P0747	Establish or maintain study reference files	100
P0754	Maintain training records or files	88
P0742	Determine training requirements	88
P0761	Write training reports	88
O0713	Inspect personnel for compliance with military standards	75
Q0788	Safeguard classified materials	75
P0739	Complete student entry or withdrawal forms	75
P0758	Schedule training	75
Q0787	Review technical order changes	75
O0684	Direct training functions	63
Q0775	Inventory classified materials	63
P0756	Prepare command standard training packages	63
O0717	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	63
P0748	Evaluate personnel to determine training needs	63
Q0779	Maintain or update status indicators, such as boards, graphs, or charts	63
Q0776	Maintain accountability records for classified materials or documents	63
Q0777	Maintain administrative files	63
P0741	Conduct training conferences, briefings, or debriefings	63
Q0762	Annotate security forms for facilities or security containers	63
Q0769	Identify and report suspected security compromises	63
R0798	Inventory equipment, tools, parts, or supplies	50
P0751	Evaluate effectiveness of training programs, plans, or procedures	50
P0749	Evaluate training methods or techniques of instructors	50
O0714	Interpret policies, directives, or procedures for subordinates	50
P0738	Brief personnel concerning training programs or matters	50
Q0781	Maintain technical order libraries	50
R0805	Store equipment, tools, parts, or supplies	38
O0712	Initiate actions required due to substandard performance of personnel	38